with breast cancer in the UK NHS. **METHODS:** A previously published decision tree model was populated and developed with the Vial et. al. and Brown et. al. trial data to assess the cost-effectiveness of using branded Taxotere®versus its generic counterpart docetaxel from the UK NHS perspective. **RESULTS:** If the branded Taxotere® was promoted as the first-line therapy, it would cost the UK NHS £411.54 per vial per patient with 0.434 QALY (Quality-Adjusted Life Years) gain compared to £412.98 with 0.418 QALY gain if the generic docetaxel was promoted instead and failed the therapy. Although the acquisition cost of docetaxel is more than 50% less than that of Taxotere®, promoting the generic docetaxel based on its lower acquisition cost, only, would result in increasing the total health care cost compared to Taxotere®. **CONCLUSIONS:** Based on the decision tree model generated in this study, promoting the branded Taxotere® is more cost-effective compared to its generic counterpart docetaxel. This should be considered for implementation in practice and for future guidelines.

PCN46

COST-EFFICACY ANALYSIS OF LICENSED DRUGS FOR THE TREATMENT OF METASTATIC CASTRATE RESISTANT PROSTATE CANCER POST DOCETAXEL BASED ON HOSPITAL DRUG EVALUATION METHODOLOGY IN SPAIN

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OBJECTIVES: To estimate which is the dominant treatment between the only two drugs that had been able to demonstrate overall survival (OS) improvements in patients with metastatic castrate resistant prostate cancer (mCRPC) that have progressed on or after docetaxel treatment, and that were approved by the EMA in 2011 (AA by accelerated procedure): cabazitaxel (CBZ) and abiraterone acetate (AA),. **METHODS:** We replicated the methodology most commonly used by Spanish hospitals to estimate the cost-efficacy of oncologic drugs (OS gains and incremental costs vs. those of comparators) by: (i) taking the perspective of the Spanish NHS (ii) estimating treatment costs based on the product labels (i.e. main medication, comedication, premedication, and primary prophylaxis) at ex-factory prices, and the cost of administering such medications; and (iii) the OS data from the respective pivotal phase III trials: for CBZ vs. mitoxantrone + prednisone (MP) OS was 15.1 vs. 12.7 months. For AA vs. placebo + prednisone (PP) OS was 15.8 vs. 11.2. Input for the base case analysis comes from Phase III randomized clinical trials and from publicly available cost data. Sensitivity analysis was performed on: (i) length of treatment; (ii) median OS; and (iii) G-CSF usage and drug administration costs. **RESULTS:** In our base case scenario the cost per cycle of CBZ was 4,711.52€ vs. 78.20€ for MP. The cost per cycle of AA was 3,179.26€ vs. 11.85€ for PP. Treatment costs difference for CBZ vs. MP is 27,799.93€ (range 13,665.36€ – 46,646.01€) and for AA vs. PP is 25,386.71€ (range 12,669.65€ - 38,103.76€). OS gain is 2.4 months for CBZ and 4.6 months for AA. **CONCLUSIONS:** In Spain, based on local hospital methodology, AA would be the dominant alternative (higher OS gain and lower incremental cost) to treat mCRPC patients that have progressed on or after a docetaxel based regime.

PCN47

COST-OF-ILLNESS OF COMMON CANCER TYPES - RESULTS OF A HEALTH INSURANCE CLAIMS DATA ANALYSIS

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OBJECTIVES: In Germany, health economic studies are increasingly based on health insurance claims data analysis. Such data offer a wide range of scientific applications, especially when focusing on the assessment of resource utilization patterns and costs. The objective of our study was to estimate the direct health care costs of three frequent types of cancer (colorectal, breast, and prostate cancer) from a third-party payer perspective using longitudinal data from a German statutory health insurance fund and employing a matched pairs design. **METHODS:** Our analysis is based on administrative data of a German sickness fund covering a 5-year period (2005-2009). A total of 42,085 cancer patients were included. Disease-specific costs were estimated by matching cancer patients to counterparts without the particular condition and subsequently comparing the costs of the two groups. One-to-one matching was performed by application of the propensity score method to balance patient characteristics among the cancer groups and non-cancer controls. The cost categories considered in this study included prescription drug costs, outpatient visit costs, and hospitalization costs. **RESULTS:** The mean cancer-associated 5-year costs per patient amounted to €5,429 for colorectal cancer, €3,200 for breast cancer, and €5,350 for prostate cancer. The average disease-attributable costs of the first year following diagnosis were €8,750, €4,300, and €4,750 for colorectal, breast and prostate cancer, respectively. Corresponding excess costs of the last year of life were €15,900, €10,950, and €14,750. Costs associated with hospitalization accounted for a major part of the total disease-specific costs (up to 80%). **CONCLUSIONS:** This cost-of-illness study based on claims data analysis confirms the high economic burden of colorectal, breast, and prostate cancer. Most of the costs occurred in the initial and terminal treatment phases. Inpatient treatment was found to be the main cost driver.

PCN48

THE COST OF TREATING PENILE CANCER IN ENGLISH HOSPITALS: PRELIMINARY RESULTS USING THE HOSPITAL EPISODES STATISTICS (HES) DATABASE

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Incidence of penile cancer in Europe is slightly increasing. Survival rates in penile cancer are good, however, there is little research into treatment costs. **OBJECTIVES:** To estimate the cost of treating penile cancer in English hospitals, using data from the HES database. This investigation is part of a wider project aimed at quantifying the total economic burden of penile cancer in the UK. **METHODS:** Inpatient admissions for penile cancer between the years 2006/07 to 2010/11 were retrospectively analysed. Data was obtained from HES, a database covering English hospital activity, with inpatient episodes aggregated into spells of care associated with a specific Healthcare Resource Group (HRG). The HRGs were linked to costs from the UK National Tariff in order to calculate the average annual and per patient payments for inpatient treatment of penile cancer, as per the NHS Payment by Results framework. Where necessary, costs were supplemented by expert opinion and other published cost estimates. A limited amount of HES data on outpatient consultations was also collected and analysed. **RESULTS:** The mean annual amount paid to English hospitals for inpatient treatment of invasive penile cancer in England was estimated to be £2,391,700, with a further £189,106 paid for carcinoma in situ of the penis. Per inpatient, mean costs were approximately £3,743 and £1,323 for invasive penile cancer and carcinoma in situ, respectively. Outpatient costs were considerably lower, due to the majority of care being delivered in an inpatient setting and issues with HES outpatient data collection. Further research into outpatient costs is currently ongoing. **CONCLUSIONS:** The burden of penile cancer in the UK has cost implications, the full extent of which cannot yet be ascertained due to underestimation of outpatient costs. Any preventive intervention aimed at decreasing this burden should be carefully considered.

PCN49

ECONOMIC BURDEN OF MELANOMA IN RUSSIA

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OBJECTIVES: To estimate the costs associated with melanoma for Russia in 2009. **METHODS:** Prevalence-based cost-of-illness analysis (COI) was performed from the payer's point of view (national and regional governments). Direct medical costs (hospital and outpatient services and drugs provided in outpatient care), non-medical costs (monetary payments in social benefits) and indirect costs (projected productivity loss due to sickness and disability) associated with melanoma in Russia in 2009 were calculated. We obtained the data for analysis from the national statistics, regional cancer and prescription registries, expert panel interviews and literature. The costs were calculated for the total population of melanoma patients in Russia. To calculate direct medical costs, we used national reimbursement rates per unit of care (1 hospital day or 1 visit to an out-patient oncology clinic) and regional data on melanoma drug costs. To access non-medical costs, we used data on social benefits expenditures. Indirect costs were estimated with friction costs method. **RESULTS:** The total costs of melanoma in Russia in 2009 was 771,2 million RUR (€18,8mln), or 11 314 RUR (€275,9) as average cost per patient per year. Almost half of total costs (48.3%) occur in patients during the 1st year after diagnosis. The direct medical costs accounted for 52,41% of total spending, direct non-medical costs – for 34,9%, and indirect costs – for 12,69%. Direct medical costs represented 72,8% of total spending in melanoma patients within the 1st year after the diagnosis; during the subsequent years after the diagnosis this number reduces to 34,2%. **CONCLUSIONS:** Our analysis demonstrates that the most significant part of medical costs for melanoma occur during the 1st year after diagnosis that corresponds with the results of other COI studies in oncology; in subsequent years the main costs are outside the scope of health care system.

PCN50

TREATMENT PATTERNS, HEALTH CARE UTILIZATION, AND COSTS OF OVARIAN CANCER IN CENTRAL AND EASTERN EUROPE USING A DELPHI PANEL BASED ON A RETROSPECTIVE CHART REVIEW

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OBJECTIVES: Despite the considerable disease burden of ovarian cancer (OC), there were no cost studies in Central and Eastern Europe. This study aimed to describe treatment patterns, health care resource utilization and costs associated with OC in Hungary, Poland, Serbia and Slovakia. **METHODS:** Overall clinical practice for management of epithelial ovarian cancer was investigated through a three-round Delphi panel consisting of 15 clinical experts. Experts completed a survey based on patient records (N=1,542). The survey was developed based on clinical guidelines and the FIGO Annual Report. Means, ranges and outlier values were discussed with the experts during a telephone interview. Finally, consensus estimates were obtained in face-to-face workshops. Based on these results, overall cost of OC was estimated using a Markov model. **RESULTS:** The patients included in the chart review were followed from pre-surgical diagnosis and in each phase of treatment, i.e. primary surgical staging and surgery, chemotherapy and chemotherapy monitoring, follow-up and palliative care. Overall treatment patterns were similar but regimens in second and subsequent lines of chemotherapy varied across the countries. The

5-year overall cost per patient was €13,900-€17,200 in Hungary, €16,300-€18,300 in Poland, €8,900-€9,600 in Serbia and €12,500-€15,700 in Slovakia (presented in ranges due to uncertainty around palliative care). Chemotherapy-associated costs accounted for 59-71% of the total, followed by primary surgical treatment (13-23%) and palliative care (4-15%). Contribution of drug costs to the overall costs varied among the countries (in Poland 29%, in Serbia 55% of total costs). **CONCLUSIONS:** Given the scarcity of OC cost studies worldwide, these findings may provide a useful source for clinicians and decision makers in understanding the economic implications of managing ovarian cancer in Central and Eastern Europe and the need for innovative therapies.

PCN51

COMPREHENSIVE INVESTIGATION OF ADVERSE EVENT (AE)-RELATED COSTS IN PATIENTS WITH METASTATIC BREAST CANCER (MBC) TREATED WITH FIRST- AND SECOND-LINE CHEMOTHERAPIES

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OBJECTIVES: To examine the incremental costs of chemotherapy-associated AEs in mBC **METHODS:** The PharMetrics Database (2000-2010) was used to identify mBC patients treated with first- or second-line taxane (paclitaxel or docetaxel) or capecitabine-based regimens, with treatment episodes (TEs) ≥30 days. Inverse probability weighting was used to balance patient characteristics between cohorts with and without AEs. Incremental costs attributable to AEs were assessed by comparing costs incurred during TEs with and without AEs and included the following components: inpatient, outpatient, emergency room, other medical service, pharmacy costs, and total health care costs. Sensitivity analyses were conducted to examine the average monthly costs in patients cohorts stratified by the number and type of AEs reported during the TEs. **RESULTS:** 3,222 women (mean age=57) received a first- and/or second-line taxane or capecitabine for mBC. Of the 2,678 1st-line patients, 69.7% received taxane and 30.3% capecitabine. AEs were commonly seen in patients treated with first-line taxane (94.6%) and capecitabine (83.7%). On average, the total monthly incremental cost associated with AEs was 38% higher ($3,547) for taxane and 9% higher ($854) for capecitabine. Inpatient and other drug costs accounted for a majority of the increased costs. Of 1,084 second-line patients, 66.0% received taxane and 34.0% with capecitabine. 94.4% of second-line taxane patients and 84% of capecitabine patients had an AE. The average total monthly incremental cost associated with AEs for taxane was $5,320 and $4,933 for capecitabine (69.5% and 82.9% higher vs. patients without AEs). Differences in pharmacy costs drove the incremental AE-related costs in taxanes users; inpatient and outpatient costs accounted for the majority of these costs in capecitabine users. Sensitivity analyses showed a clear trend of an increasing economic burden with the number of AEs. **CONCLUSIONS:** Chemotherapy-related AEs are associated with a substantial economic burden primarily explained by increased inpatient, outpatient, and pharmacy costs.

PCN52

ENGLISH HOSPITAL COSTS FOR ANAL CANCER: PRELIMINARY RESULTS FROM AN INVESTIGATION USING HOSPITAL EPISODES STATISTICS (HES)

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There is some evidence that the annual number of patients diagnosed with anal cancer in the UK is increasing. Such a rise could potentially have important health and economic consequences. **OBJECTIVES:** To estimate hospital treatment costs for anal cancer in England, based on data from the HES database, as part of a wider study investigating the total economic burden of anal cancer in the UK. **METHODS:** Inpatient admissions for anal cancer between the years 2006/07 to 2010/11 were retrospectively analysed. Data was obtained from HES, a database covering English hospital activity, with inpatient episodes aggregated into spells of care associated with a specific Healthcare Resource Group (HRG). The HRGs were linked to costs from the UK National Tariff in order to calculate the average annual and per inpatient payments for treatment of anal cancer, as per the NHS Payment by Results framework. Where necessary, costs were supplemented by expert opinion and other published cost estimates. A limited amount of HES data on outpatient consultations was also collected and analysed. **RESULTS:** In England, the average annual payments for inpatient care associated with anal cancer are estimated to total £7,754,219 (males = £2,930,360, females = £4,823,859). This translated to a mean annual cost per inpatient of £4,605 and £5,232 for males and females respectively. Outpatient costs were lower across both genders with annual payments for outpatient care estimated at £184,479 for males and £286,686 for females. This is likely to be a significant underestimate due to coverage issues with the HES outpatient dataset on account of local variation in the sources of funding for certain treatments. Further research into outpatient costs is currently ongoing. **CONCLUSIONS:** Despite the significant underestimation of the outpatient costs, these results suggest anal cancer places a significant health and economic burden on the English NHS.

PCN53

REAL WORLD MANAGEMENT AND COSTS IN METASTATIC MALIGNANT MELANOMA (MM) PATIENTS: A PILOT STUDY BASED ON AN INSTITUTIONAL PATIENT REGISTRY

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OBJECTIVES: To assess the management and associated lifetime costs in MM patients as from the diagnosis of unresectable metastatic disease until death. **METHODS:** A retrospective patient chart review was performed at the Antwerp University Hospital to obtain data on medical consumption related to the management of unresectable metastatic MM (umMM). A complete registry of all MM patients who visited the hospital between 2007 and May 2012 was compiled. Eligible for this retrospective chart review were patients with umMM with sufficient data available and who deceased before May 2012. Data on demographics, disease characteristics and management of umMM were collected. Direct costs were calculated by multiplying each item of resource use with its unit cost (2012, €) using the Belgian public health care payer's perspective (PHCP) and patient's perspective. Average (bootstrap 95%CI) overall costs per patient were calculated. **RESULTS:** Out of 148 registered MM patients, 29 were eligible and included in this chart review. The median overall survival time in all patients was 6.0 months. 86% (n=25) of patients were treated by systemic treatment(s) of which 24% (n=6) received up to 4 different treatment lines. Dacarbazine was administered in all patients as a single agent or in combination therapy. 4 patients received 1 to 4 cycles of ipilimumab treatment. 53 (43%) of the 123 hospitalizations were for chemotherapy administration. The mean overall cost per patient was €31,637 (bootstrap 95% CI:23,993-39,891), of which € 30,585 € (95%CI: 23,154-38,784) was reimbursed. The PHCP cost was driven by hospitalization costs and systemic treatments costs both representing 33% of total cost. **CONCLUSIONS:** Management of umMM result in considerable costs for the PHCP mainly driven by systemic treatment costs and hospitalization costs. It would be interesting to extend this study in a broader population.

PCN54

ECONOMIC BURDEN ASSOCIATED WITH PANCREATIC CANCER IN EUROPE

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OBJECTIVES: This review was conducted to assess the economic burden of pancreatic cancer (PC) in Europe. **METHODS:** Systematic search of Embase® and MEDLINE® databases was conducted from January 2002 to June 2012 to identify economic studies on PC in Europe. English language studies, regardless of design and intervention were included. Eligibility of trials was assessed by two reviewers with any discrepancy reconciled by a third, independent reviewer. **RESULTS:** Of the 97 retrieved citations, seven met pre-defined inclusion criteria. Four studies were cost-analyses while other three were cost-minimisation, cost-utility, and cost-benefit analysis, respectively. In Europe, the predicted PC mortality varied between 6.6-8.2/100,000 men and between 4-5.7/100,000 women in 2012. In Sweden, the direct costs/patient/month associated with PC rose from €1578 in 2001 to €3103 in 2002-2005 and then to €6590 in 2009. In 2009, the major contributors of this direct cost were hospitalisations (€4670), surgery (€719), and chemotherapy (€258). The mean total cost of illness/patient for PC in Germany was €31,375 (cost years 2000-2003), where direct cost was responsible for 90% of this total value and the remaining 10% was contributed by indirect costs including loss of productivity due to days-off work. In 2009, the estimated cost/patient associated with loss of productivity due to absenteeism was €6077 in Sweden. Upon assessment of curative resection cost for PC per patient in Sweden, it was found to be about €39,000 in 2009. The mean costs per patient associated with the use of diagnosis of PC were $1925 in Switzerland (2004), $1249 in Spain (2001), and €1545 in Sweden (2001). **CONCLUSIONS:** Although limited data is available, a trend in increase of fiscal burden of PC was observed. The major contributors of this burden were surgery, hospitalisations, chemotherapy, and loss of productivity. Therapies that prevent or delay disease progression could reduce this burden.

PCN55

THE COST OF RARE DISEASES: THE EXAMPLE OF CHRONIC LYMPHOCYTIC LEUKEMIA

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OBJECTIVES: Chronic lymphocytic leukemia (CLL) is a slowly progressing but mortal disease that imposes a high economic burden on sickness funds and society. The objective of this study is to analyze and compare the direct and indirect costs of CLL in Germany from the perspective of both sickness funds and society, and to analyze the burden of the disease. **METHODS:** Using a database of 7.6 million enrolled individuals, we identified 4198 CLL patients in 2007 and 2008. Costs attributable to CLL were estimated using a case-control design, with a control group of 150 individuals randomly drawn by age and sex for each CLL observation. We used GEE and count data models to test for differences in costs and health care utilization. **RESULTS:** The cost attributable to CLL per prevalent case amounts to €4946 from the payer's perspective, and €7910 from that of society. Inpatient stays and pharmaceutical consumption are the main cost drivers of the disease. The burden of disease in Germany is estimated to be approximately €201 million per year from the sickness fund perspective (€322 million from the societal perspective). **CONCLUSIONS:** Compared with common diseases such as diabetes or COPD, the economic burden of CLL is considerably lower. However, the cost of treatment per case is about twice as high as for these common diseases, even though treatment is performed in later stages only. Owing to new health care technologies, an ageing population, and an increasing incidence, it is likely that the burden of the disease will continue to grow.

PCN56

PRELIMINARY RESULTS FROM A STUDY OF HOSPITAL COSTS DUE TO TREATMENT OF HEAD AND NECK CANCERS IN ENGLAND

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